

**Amendments to the Specification (other than claims):**

0022

Please replace paragraph [0024] with the following amended paragraph:

spa  
10/28/08  
0022  
[0024] Given the circumstances, then, a wafer pocket contour that would not bring about cracking in the ceramic susceptor, yet ensure isothermal quality in the wafer face, was investigated. The result was that when, as illustrated in FIG. 1, the angle  $\theta$  that the circumferential inside face 5b and the bottom face 5a of the wafer pocket 5 form is over 90° and 170° or less, cracking in the ceramic susceptor 1 with the discontinuity at the wafer pocket 5 being the originating point can be prevented at the same time the required isothermal quality in the wafer face is maintained. By the same token, an instance in which the curvature R of the bottom-portion circumferential verge 5c where the circumferential inside face 5b and the bottom face 5a of the wafer pocket 5 join was rendered 0.1 mm or more yielded similar efficacy.

0029

Please replace paragraph [0034] with the following amended paragraph:

spa  
10/29/08  
0029  
[0034] A recess (wafer pocket) of depth equal to that of a wafer 0.8 mm thick and whose diameter was 315 mm was machined into the face on the wafer-carrying side of the post-bonded items. In doing so, the items were processed so that the angle  $\theta$  that the wafer-pocket circumferential inside face and the wafer-pocket bottom face form would for each sample be a respective one of given angles set forth in the following Table I. In addition, on some of the samples, the bottom-portion circumferential verge where the wafer-pocket circumferential inside face and the wafer-pocket bottom face join was machined into a curved surface having the curvature R set forth in Table I. Each of the sample AlN-ceramic susceptors (of FIG. 2 structure) set forth in Table I below was produced in this way.

Please replace paragraph <sup>0030</sup>[0032] with the following amended paragraph:

<sup>0030</sup>  
[0032] Ceramic-susceptor temperature was elevated to 500°C by passing an electric current at a voltage of 200 V into the resistive heating element of each of the sample ceramic susceptors produced, through two electrodes that were formed on the susceptor surface on the side opposite the wafer-carrying face. Therein, a silicon wafer of 0.8 mm thickness and 304 mm diameter was laid in the wafer pocket in the ceramic susceptors, and the surface temperature distribution was measured to find the isothermal rating. The results obtained are given by sample in Table I below.

Table I

Sample	Angle $[\theta]$ and curvature $R$ (mm)	Wafer-surface isothermal rating (%) at 500°C	Presence of cracking (N = 5)
1*	No wafer pocket	0.78	—
2*	$[\theta] = 80$ ; no $R$	0.40	3/5
3*	$[\theta] = 90$ ; no $R$	0.37	2/5
4	$[\theta] = 90$ ; $R = 0.1$	0.38	0/5
5	$[\theta] = 91$ ; no $R$	0.38	0/5
6	$[\theta] = 91$ ; $R = 0.1$	0.37	0/5
7	$[\theta] = 110$ ; no $R$	0.40	0/5
8	$[\theta] = 135$ ; no $R$	0.43	0/5
9	$[\theta] = 150$ ; no $R$	0.45	0/5
10	$[\theta] = 170$ ; no $R$	0.48	0/5
11*	$[\theta] = 175$ ; no $R$	0.64	0/5

Note: Samples marked with an asterisk (\*) in the table are comparative examples.

Please replace paragraph <sup>0032</sup>[0033] with the following amended paragraph:

<sup>0032</sup>  
[0033] As will be understood from the results set forth in Table I above, in ceramic susceptors made of aluminum nitride, by forming a wafer pocket in the wafer-carrying face and either making the angle  $[\theta]$  that the wafer-pocket circumferential inside face and the wafer-pocket bottom face form be  $90^\circ < \theta \leq 170^\circ$ ; or providing at

the circumferential verge of the bottom portion of the wafer pocket a curved surface whose curvature  $R$  is  $R \geq 0.1$  mm, the isothermal rating in the face of a wafer when the wafer is heated can be brought to within  $\pm 0.5\%$ , without occurrence of cracking in the ceramic susceptors.

10/29/8  
SPW  
Please replace paragraph <sup>0035</sup>[0036] with the following amended paragraph:

<sup>0035</sup>  
[0036] A wafer pocket of depth equal to that of a wafer 0.8 mm thick and whose diameter was 315 mm was machined into the face on the wafer-carrying side of the post-bonded items. In doing so, the items were processed likewise as with Embodiment 1, and sample by sample the angle  $[\square]$   $\theta$  that the wafer-pocket circumferential inside face and the wafer-pocket bottom face form, and the curvature  $R$  of the bottom-portion circumferential verge where the wafer-pocket circumferential inside face and the wafer-pocket bottom face join was varied as set forth in the following Table II.

10/29/8  
SPW  
Please replace paragraph <sup>0036</sup>[0037] with the following amended paragraph:

<sup>0036</sup>  
[0037] Ceramic-susceptor temperature was elevated to 500°C by passing an electric current at a voltage of 200 V into the resistive heating element of each of the thus obtained  $\text{Si}_3\text{N}_4$  ceramic susceptors, through two electrodes that were formed on the susceptor surface on the side opposite the wafer-carrying face. Therein, a silicon wafer of 0.8 mm thickness and 304 mm diameter was laid in the wafer pocket in the ceramic susceptors, and the surface temperature distribution was measured to find the isothermal rating. The results obtained are given by sample in Table II below.

10/24/8  
SPW  
Please replace paragraph <sup>0044</sup>[0043] with the following amended paragraph:

<sup>0044</sup>[0043] As will be understood from Table III above, also in ceramic susceptors made of aluminum oxynitride, by either making the angle that the circumferential inside face of a wafer pocket, shaped in the susceptor wafer-carrying face, and the bottom face of the wafer pocket form be  $90^\circ < [\square] \theta \leq 170^\circ$ , or the curvature R of the circumferential verge of the bottom portion of the wafer pocket be  $R \geq 0.1$  mm, the isothermal rating in the face of wafers during wafer heating can be brought to within  $\pm 1.0\%$ , without occurrence of cracking in the ceramic susceptors.

10/24/8  
SPW  
Please replace paragraph <sup>0047</sup>[0046] with the following amended paragraph:

<sup>0047</sup>[0046] A wafer pocket of depth equal to that of a wafer 0.8 mm thick and whose diameter was 315 mm was machined into the face on the wafer-carrying side of each of the ceramic susceptors. In doing so, the susceptors were processed likewise as with Embodiment 1, and sample by sample the angle  $[\square] \theta$  that the wafer-pocket circumferential inside face and the wafer-pocket bottom face form, and the curvature R of the bottom-portion circumferential verge where the wafer-pocket circumferential inside face and the wafer-pocket bottom face join was varied as set forth in the following Table IV.

10/24/8  
SPW  
Please replace paragraph <sup>0048</sup>[0047] with the following amended paragraph:

<sup>0048</sup>[0047] Ceramic-susceptor temperature was elevated to 500°C by passing an electric current at a voltage of 200 V into the resistive heating element of each of the thus obtained ceramic susceptors, through two electrodes that were formed on the susceptor surface on the side opposite the wafer-carrying face. Therein, a silicon wafer of 0.8 mm thickness and 304 mm diameter was laid in the wafer pocket in the ceramic susceptors, and the surface temperature distribution was measured to find the isothermal rating. The results obtained are given by sample in Table IV below.

Table IV

Sample	Resistive heating element	Angle $\theta$ and curvature $R$ (mm)	Wafer-surface isothermal rating (%) at 500°C	Presence of cracking (N = 5)
32*	Mo	$\theta = 90$ ; no $R$	0.35	2/5
33	Mo	$\theta = 90$ $R = 0.1$	0.36	0/5
34	Mo	$\theta = 91$ ; no $R$	0.36	0/5
35	Mo	$\theta = 91$ $R = 0.1$	0.36	0/5
36	Mo	$\theta = 110$ $R = 0.1$	0.39	0/5
37	Mo	$\theta = 135$ ; no $R$	0.43	0/5
38	Mo	$\theta = 170$ ; no $R$	0.47	0/5
39*	Mo	$\theta = 175$ ; no $R$	0.65	0/5
40*	Pt	$\theta = 90$ ; no $R$	0.37	3/5
41	Pt	$\theta = 90$ $R = 0.1$	0.38	0/5
42	Pt	$\theta = 91$ ; no $R$	0.38	0/5
43	Pt	$\theta = 91$ $R = 0.1$	0.37	0/5
44	Pt	$\theta = 110$ $R = 0.1$	0.40	0/5
45	Pt	$\theta = 135$ ; no $R$	0.44	0/5
46	Pt	$\theta = 170$ ; no $R$	0.49	0/5
47*	Pt	$\theta = 175$ ; no $R$	0.68	0/5
48*	Ag-Pd	$\theta = 90$ ; no $R$	0.36	4/5
49	Ag-Pd	$\theta = 90$ $R = 0.1$	0.36	0/5
50	Ag-Pd	$\theta = 91$ ; no $R$	0.36	0/5
51	Ag-Pd	$\theta = 91$ $R = 0.1$	0.35	0/5
52	Ag-Pd	$\theta = 110$ $R = 0.1$	0.39	0/5
53	Ag-Pd	$\theta = 135$ ; no $R$	0.43	0/5
54	Ag-Pd	$\theta = 170$ ; no $R$	0.47	0/5
55*	Ag-Pd	$\theta = 175$ ; no $R$	0.66	0/5
56*	Ni-Cr	$\theta = 90$ ; no $R$	0.34	3/5
57	Ni-Cr	$\theta = 90$ $R = 0.1$	0.35	0/5
58	Ni-Cr	$\theta = 91$ ; no $R$	0.35	0/5
59	Ni-Cr	$\theta = 91$ $R = 0.1$	0.35	0/5
60	Ni-Cr	$\theta = 110$ $R = 0.1$	0.37	0/5
61	Ni-Cr	$\theta = 135$ ; no $R$	0.43	0/5
62	Ni-Cr	$\theta = 170$ ; no $R$	0.48	0/5
63*	Ni-Cr	$\theta = 175$ ; no $R$	0.63	0/5

Note: Samples marked with an asterisk (\*) in the table are comparative examples.

<sup>0050</sup>  
Please replace paragraph [0048] with the following amended paragraph:

<sup>0050</sup>  
[0048] As will be understood from Table IV above, likewise as the case with the tungsten resistive heating elements demonstrated in Embodiment 1, also in ceramic susceptors whose resistive heating element is made of Mo, or Pt, or Ag—Pd, or Ni—Cr, by either making the angle  $[\theta]$  that the circumferential inside face of a wafer pocket, shaped in the susceptor wafer-carrying face, and the bottom face of the wafer pocket form be  $90^\circ < [\theta] \leq 170^\circ$ , or the curvature R of the circumferential verge of the bottom portion of the wafer pocket be  $R \geq 0.1$  mm, the isothermal rating in the face of wafers during wafer heating can be brought to within  $\pm 0.5\%$ , without occurrence of cracking in the ceramic susceptors.

<sup>0054</sup>  
Please replace paragraph [0052] with the following amended paragraph:

<sup>0054</sup>  
[0052] After that, a wafer pocket of depth equal to that of a wafer 0.8 mm thick and whose diameter was 315 mm was machined into the face on the wafer-carrying side of the discoid items. In doing so, the susceptors were processed likewise as with Embodiment 1, and sample by sample the angle  $[\theta]$  that the wafer-pocket circumferential inside face and the wafer-pocket bottom face form, and the curvature R of the bottom-portion circumferential verge where the wafer-pocket circumferential inside face and the wafer-pocket bottom face join was varied as set forth in the following Table V. AlN-ceramic susceptors (of FIG. 2 structure) interiorly having a tungsten resistive heating element and a plasma electrode were produced in this way.

<sup>0055</sup>  
Please replace paragraph [0053] with the following amended paragraph:  
<sup>0055</sup>  
[0053] Ceramic-susceptor temperature was elevated to 500°C by passing an electric current at a voltage of 200 V into the resistive heating element of each of the obtained ceramic susceptors, through two electrodes that were formed on the susceptor surface on the side opposite the wafer-carrying face. Therein, a silicon

wafer of 0.8 mm thickness and 304 mm diameter was laid in the wafer pocket in the ceramic susceptors, and the surface temperature distribution was measured to find the isothermal rating. The results obtained are given by sample in Table V below.

Table V

Sample	Angle $\theta$ and curvature $R$ (mm)	Wafer-surface isothermal rating (%) at 500°C	Presence of cracking (N = 5)
64*	$\theta = 80$ ; no $R$	0.41	3/5
65*	$\theta = 90$ ; no $R$	0.38	2/5
66	$\theta = 90$ ; $R = 0.1$	0.39	0/5
67	$\theta = 91$ ; no $R$	0.39	0/5
68	$\theta = 91$ ; $R = 0.1$	0.38	0/5
69	$\theta = 110$ ; $R = 0.1$	0.42	0/5
70	$\theta = 135$ ; no $R$	0.45	0/5
71	$\theta = 150$ ; no $R$	0.47	0/5
72	$\theta = 170$ ; no $R$	0.49	0/5
73*	$\theta = 175$ ; no $R$	0.66	0/5

Note: Samples marked with an asterisk (\*) in the table are comparative examples.

Please replace paragraph [0054] with the following amended paragraph:

[0054] As will be understood from Table V above, also in aluminum-nitride ceramic susceptors having a resistive heating element and a plasma electrode, by either making the angle  $\theta$  that the circumferential inside face of a wafer pocket, shaped in the susceptor wafer-carrying face, and the bottom face of the wafer pocket form be  $90^\circ < \theta \leq 170^\circ$ , or the curvature  $R$  of the circumferential verge of the bottom portion of the wafer pocket be  $R \geq 0.1$  mm, the isothermal rating in the face of wafers during wafer heating can be brought to within  $\pm 0.5\%$ , without occurrence of cracking in the ceramic susceptors.